WHAT IS CLAIMD IS:

1. A metallic glass laminate, wherein a metallic glass layer of an amorphous phase is formed on a substrate surface and no continuous pore (pinhole) through the metallic glass layer is present.

2. A metallic glass laminate according to claim 1, wherein the metallic glass layer is formed by solidification and lamination of at least part of metallic glass powder in a molten state or supercooled liquid state on the substrate surface.

3. A metallic glass laminate according to claim 1 or 2, wherein metallic glass of amorphous phase prepared in advance is used as a raw material to form the metallic glass layer.

4. A metallic glass laminate according to any of claims 1 to 3, wherein the thickness of the metallic glass layer is equal to or more than 10 μm.

5. A metallic glass laminate according to any of claims 1 to 4, wherein the supercooled liquid temperature range ΔTx of the metallic glass is equal to or more than 30 °C.

6. A metallic glass laminate according to any of claims 1 to 5, wherein the porosity is equal to or less than 2%.

7. A metallic glass laminate according to any of claims 1 to 6, wherein the metallic glass layer is a thermal sprayed coating.

8. A metallic glass laminate according to claim 7, wherein the thermal sprayed coating is a high-velocity oxygen-fuel thermal sprayed coating.

9. A metallic glass laminate according to claim 7 or 8, wherein there is lamination of a thermal splayed particle, which is thinly collapsed in a circular to oval shapes or has a core that is thinly collapsed in a circular to oval shape at the center, in the metallic glass layer.

10. A metallic glass laminate according to any of claims 1 to 8, wherein the metallic glass consists of a plurality of elements and contains at least one element from the group of Fe, Co, Ni, Ti, Zr, Mg, Cu, and Pd as its constituent element.

11. A metallic glass laminate according to claim 10, wherein the metallic glass contains Fe in a range of 30-80 atomic % as its constituent element.

12. A metallic glass laminate according to any of claims 1 to 11, wherein the substrate is metal or ceramic.

13. A metallic glass laminate according to claim 12, wherein the substrate is light metal which specific gravity is equal to or less than 3.0.

14. A metallic glass laminate according to any of claims 1 to 13, wherein the metallic glass layer formed on the substrate surface has a pattern.

15. A metallic glass laminate according to any of claims 1 to 14, wherein the substrate surface has a convexo-concave pattern and the metallic glass layer is formed thereon.

16. A metallic glass laminate according to any of claims 1 to 15, wherein a surface of the metallic glass layer has a concavo-convex pattern and/or mirror-like smooth surface.

17. A metallic glass laminate according to any of claims 1 to 16, wherein the metallic glass layer absorbs hydrogen under a hydrogen atmosphere to change a electrical characteristic value.

18. A metallic glass bulk, wherein the bulk is obtained by removing the substrate from the metallic glass laminate according to any of claims 1 to 17.

19. A hydrogen sensor, wherein the metallic glass laminate according to claim 17 or a metallic glass bulk obtained by removing the substrate from the metallic glass laminate is applied.

20. A production method of a metallic glass laminate, wherein a metallic glass layer is formed by solidification and lamination of at least part of metallic glass powder in a molten state or supercooled liquid state on a substrate surface.

21. A production method of a metallic glass laminate according to claim 20, wherein the metallic glass powder is amorphous phase.

22. A production method of a metallic glass laminate according to claim 20 or 21, wherein the metallic glass layer is formed by thermal spraying.

23. A production method of a metallic glass laminate according to claim 22, wherein the thermal spraying is high-velocity oxygen-fuel thermal spraying.

24. A production method of a metallic glass laminate according to claim 22 or 23, wherein the thermal spraying is conducted to the substrate which surface temperature is equal to or more than 100 °C.

25. A production method of a metallic glass laminate according to any of claims 20 to 24, wherein the metallic glass laminate is a laminate according to any of claims 1-18.

26. A production method of a metallic glass bulk, wherein a metallic glass laminate is obtained by a method according to any of claims 20 to 25 and then the substrate is removed from the metallic glass laminate.

27. A die-forming article, wherein the die-forming article has a structure of a metallic glass laminate according to claim 16.

28. A die-forming article according to claim 27, wherein the thickness of the metallic glass layer at the thin section is equal to or more than 0.1 mm.

29. A production method of a die-forming article, which comprises:

a step in which a metallic glass layer is laminated on a substrate surface; and

a step in which a pattern of a die is transferred to the metallic glass layer surface by pressing, with the die, the surface of the metallic glass layer in supercooled liquid temperature range.

30. A production method of a die-forming article according to claim 29, wherein a metallic glass layer is laminated on the substrate surface by high-velocity oxygen-fuel thermal spraying of metallic glass particles.

31. A production method of a die-forming article according to claim 29 or 30, wherein the thickness of the metallic glass layer is equal to or more than 0.1 mm at the lamination step of the metallic glass on the substrate surface.

32. A composite laminate, wherein the substrate of a metallic glass laminate according to any of claims 1-17 is a porous base material, and on a surface of the

porous base material, a thermal sprayed coating of the metallic glass layer without pinholes is formed.

33. A composite laminate according to claim 32, wherein the thermal sprayed coating of the metallic glass has gas selective permeability.

34. A composite laminate according to claim 33, wherein the selected gas is hydrogen.

35. A composite laminate according to any of claims 32 to 34, wherein the thickness of the thermal sprayed coating of metallic glass is 1-1000 μm.

36. A composite laminate according to any of claims 32 to 35, wherein the pore diameter of the porous base material is in the range of 0.1-1000 μm.

37. A composite laminate according to any of claims 32 to 36, wherein the shape of the composite laminate is tubular.

38. A gas separation membrane, wherein a composite laminate according to any of claims 32 to 37 is applied.

39. A production method of a composite laminate, wherein a thermal sprayed coating of metallic glass without pinholes is laminated on a surface of a porous base material by high-velocity oxygen-fuel thermal spraying of a metallic glass on the surface of the porous base material.

40. A solder-corrosion resistant member, wherein a contact surface to molten solder or an underlayer of a contact surface to molten solder is formed of a metallic glass coating layer of amorphous phase.

41. A solder-corrosion resistant member according to claim 40, wherein the member has a structure of a metallic glass laminate according to any of claims 1-16.

42. A solder-corrosion resistant member according to claim 40 or 41, wherein the solder is a lead-free solder.

43. A soldering iron tip, wherein the tip is made of a solder-corrosion resistant member according to any of claims 40-42.

44. A solder bath, wherein the bath is made of a solder-corrosion resistant member according to any of claims 40-43.